Lecture 6

Unix Commands - Part II

Shibo Li

shiboli@cs.fsu.edu

Department of Computer Science
Florida State University

The slides are mainly from Sharanya Jayaraman

Recap - Part I

- `clear` - clears the current screen and displays theprompt at the top of the screen
- `who` and `whoami` - users whoare currently logged in / tells you your username
- `pwd` - show you whichdirectory you are currently working in
- `ls` - lists the contents of a directory
- Some commands have more options, specied as ags after the command. *e.g.*, `ls -l`

Recap - Part I

- `cd` - move between directories
  - `cd` by itself, it will take you to your home directory.
  - `cd ..` will take you back one directory level.
  - You can also mix and match, separating directory names. `cd ../next/level`
- `vim` a very versatile text editor
  - To create a file, type `vim filename` on the prompt
- g++ the C++ complier of Linux/Unix
  - To compile a `.cpp` file, `g++ source.cpp -o output/.o/.out/.(xx)`

Unix Commands - `mkdir`

- The `mkdir` command stands for “make directory”.
- It is used to create a directory or folder.
- Syntax: `mkdir dirname`
  Here, “dirname” is the name of the new directory you want to create.
- This will create a directory with the given name in the current directory.

Unix Commands - `rmdir`

- The `rmdir` command stands for "remove directory".
- It is used to delete the given (empty) directory.
- Syntax: `rmdir dirname`
  Here, "dirname" is the name of the directory you want to delete.
- `rmdir` can only delete **EMPTY** directory
- It will fail if the directory contains other files or directories. These files have to be deleted first, before deleting the directory.

Combining filenames with paths

- A directory path is a series of directories separated by the slash character, like this: `~/shiboli/intro/examples`
- A file can be referred to by just its filename, as long as it is inthe current working directory
- If you want to refer to a file by name, but you are in a different working directory, then simply attach the filename to the end of the path name, again with a slash as a separator: `vim ~/shiboli/intro/examples/hello.cpp`

Unix Commands - cp

- The `cp` command is used to copy files.
- Syntax: `cp sourcefile destinationfile`
- "sourcefile" can refer to the name of the source file alone, or the path and filename of the source file. Either way, this part refers to the original that is being copied or moved.
- "destinationfile" can refer to either a new destination filename, a new destination location (a different directory), or a combination of both.
- If the destination file does not exist, it will be created. If the file exists, **IT WILL BE OVERWRITTEN.**

Unix Commands - `mv`

- The `mv` command is use to move a file.
- Syntax: `mv sourcefile destinationfile`
- "sourcefile" "sourcefile" can refer to the name of the source file alone, or the path and filename of the source file. Either way, this part refers to the original that is being copied or moved.
- "destinationfile" an refer to either a new destination filename, a new destination location (a different directory), or a combination of both.

Unix Commands - mv

- If the destination file does not exist, it will be created. If thefile exists, If thefile exists, **IT WILL BE OVERWRITTEN.**
- The mv command **REMOVES** the file from its original location(unlike cp) which keeps a local copy.
- When the source and destination files are in the same directory, it **RENAMES** the file.

Unix Commands - `rm`

- The rm command is used to remove (delete) a file.
- Syntax: `rm` filename. Here, "filename" is thename of the file you want to delete.
- To remove a directory `rm -rf dirname`
  - -r remove recursively
  - -f force delete even not empty
- Once the file is deleted, it has been deleted forever, and cannot be recovered.

Programming Practice

Car Payment Formula (Amortizing Loan):

$$M = \frac{P \cdot r \cdot (1+r)^n}{(1+r)^n - 1}$$

where

- M = monthly payment
- P = loan principle (the amount you borrowed)
- r = monthly interest rate (annual interest rate divid by 12) $\frac{APR\%}{12}$
- n = total number of payments (loan term in months)

You need to use `pow(base, exponent)` from `<cmath>` library

```
Value of the car you want to purchase: 35000
Your down payment: 2000
APR of your loan (percentage):5.6
Length of your loan term (in month): 60
You monthly payment is 631.86
Total payment (include down payment) of this car is 39911.76
```